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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/912,876	07/25/2001	Bardia Pezeshki	8327-000013	7160

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EXAMINER

MENEFEE, JAMES A

ART UNIT PAPER NUMBER

2828

DATE MAILED: 06/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

09/912,876

Applicant(s)

PEZESHKI ET AL.

Examiner

James A. Menefee

Art Unit

2828

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 May 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) 6,8-12 and 18-28 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5,7,13-17 and 29-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 July 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

Art Unit: 2828

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of group III in Paper No. 9 is acknowledged. Claims 6, 8-12, and 18-28 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 9.

Drawings

Figures 3A, 3B, and 3C should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

The disclosure is objected to because of the following informalities: Remove the term "d" in line 3 of paragraph 26. Or else, the angle "d" must be specified in Fig. 2. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 2828

Claims 7 and 14-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 7 refers to a "first detector" in line 4. Claim 14 refers to "first, second and third detectors" in line 4. Parent claim 2 already refers to a detector. It is unclear whether the detectors are the same detector or different detectors as the one already mentioned in claim 2. Clarification is needed.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-5 are rejected under 35 U.S.C. 102(e) as being anticipated by Pianciola et al.

(US 2003/0026301). Pianciola discloses the claimed invention as follows (see Figs. 3-4):

Regarding claim 1, Pianciola discloses a tunable laser module comprising a laser 411 operating at a first wavelength, and a waveguide wavelength locker (lower branch, 2,4,6,8) coupled to said laser and for tuning the first wavelength to a desired wavelength.

Regarding claim 2, Pianciola discloses the wavelength locker includes detectors PD1 PD2.

Regarding claim 3, Pianciola discloses the locker generates an error signal based on a difference between the first and desired wavelengths.

Regarding claims 4-5, Pianciola discloses a controller 8 generates a control signal to adjust the wavelength of the laser to the desired wavelength.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pianciola in view of Weber (US 6,088,147). Pianciola discloses the claimed invention as shown above, but does not disclose that the wavelength locker includes a passive waveguide connected to a Mach-Zehnder interferometer having asymmetric arm lengths. Weber teaches an optical transmission system where an asymmetric Mach-Zehnder interferometer is used to modulate the output of the system. It would have been obvious to one skilled in the art to include such a waveguide asymmetrical Mach-Zehnder interferometer in the wavelength locker because it can improve distortion effects, as taught by Weber.

Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pianciola. Pianciola discloses the claimed invention as shown above, but does not disclose that the wavelength locker and the laser are mounted on a single temperature controlled package. It is well known to mount all of the parts of a laser system on a single temperature controlled package. It would have been obvious to one skilled in the art to mount these parts on a single

Art Unit: 2828

temperature controlled package so that ambient temperature changes will not affect the output characteristics of the system, thus improving results, as is well known.

Claims 14-17 and 29-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pianciola in view of Weber, and further in view of Harpin et al. (US 6,212,323). Pianciola and Weber disclose the waveguide wavelength locker having an asymmetric Mach-Zehnder interferometer as in the rejection of claim 7 above. They do not disclose the following:

Regarding claims 14 and 29-31, it is not taught that there are a plurality of Mach-Zehnder interferometers with different asymmetries. Duplication of parts is evidence of obviousness. Thus, there could be numerous branches coming off of the branch 4 of Pianciola. It would have been obvious to include a Mach-Zehnder interferometer in each branch, for the same reason one skilled in the art would have included a single Mach-Zehnder interferometer, taught by Weber in the rejection of claim 7 above. Harpin teaches a system where a plurality of Mach-Zehnder interferometers having different arm asymmetries is utilized (Fig. 4). Harpin teaches that the arm asymmetries lead to interference that can be used for wavelength selection (col. 1 lines 20-25). It would have been obvious to one skilled in the art to use a different arm asymmetry for each branch off of 4 of Pianciola, because different wavelengths are being selected in each branch, and thus a different arm asymmetry would be used to select the different wavelength.

Regarding claims 15 and 32, the Mach-Zehnder interferometers, each having different arm asymmetries, will necessarily have different frequency responses.

Regarding claim 16 and 33, one skilled in the art may leave one of the waveguides free of the Mach-Zehnder interferometer, for example to have a control branch where the effects of the

Art Unit: 2828

interferometer are not present. This would leave a passive waveguide branch connected to a detector.

Regarding claims 17 and 35, it is not disclosed that the detectors are connected to lookup tables. It is well known in the art that detectors are often connected to lookup tables so that the system may reference the table to see if the detected value compares to the lookup table value. Thus, it would have been obvious to one skilled in the art to include the lookup table connected to the detectors so that the system can reference the lookup table to check that the values being detected correspond to the expected values, as is well known.

Regarding claim 34, it is further not taught that a controller would normalize the outputs from each detector. It is well known that numerous measurements that are going to be compared should be normalized. It would have been obvious to one skilled in the art to normalize the outputs so that they can be compared, and the comparison will be useful.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Gonthier discloses a system having Mach-Zehnder interferometers with different arm asymmetries.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A. Menefee whose telephone number is (703) 605-4367. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone numbers for the

Application/Control Number: 09/912,876


Page 7

Art Unit: 2828

organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

JM
May 28, 2003


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